

The Applicant believes these claims are well supported by the application as originally filed suggesting that the prior art date is in 3/9/1990.

*renumbered  
New  
claims*  
*Rule  
1.126*  
*AA  
#03*

**New Claims:**

---

*C*

31 ~~1~~ A method of detecting blood flow or angiographic abnormality or variation in a vessel or tissue comprising:

- administering a contrast enhancing amount of a paramagnetic metal containing magnetic resonance (MR) contrast agent into a vessel;
- imaging a least a portion of the body through which the MR contrast agent passes, with a MR imaging technique, thereby collecting temporally spaced sets of 3-D and 2-D data, each data set collected serially throughout an acquisition or collection time;
- comparing 3-D and 2-D data from temporally spaced set of data by evaluating 2-D or 3-D temporally acquired images to assess the blood flow or angiographic abnormality or variation.

32 ~~2~~ The method of claim 1 wherein said comparing step is carried out by a physician visually examining at least two time sequenced images.

33 ~~3~~ The method of claim 1 wherein said comparing step is carried out by software quantitatively manipulating 3-D or 2-D data from at least two temporally spaced sets of data.

34 ~~4~~ The method of claim 1 wherein said collection time is greater than about 60 milliseconds.

35 ~~5~~ The method of claim 1 wherein said collection time is less than about 15 seconds.

36 ~~6~~ The method of claim 1 wherein said MR imaging process is selected from the group:

T2\* weighted, T2 weighted, T1 weighted imaging sequences.

37. A method of detecting blood flow abnormality or variation, in a human body, said method comprising the steps of:

administering into the vasculature of said body a timed injection of a contrast enhancing amount of a paramagnetic metal containing magnetic resonance imaging contrast agent,

subjecting said body to a magnetic resonance imaging procedure capable of generating from magnetic resonance signals from said body a series of temporally spaced images of at least part of said body into which said agent passes, said procedure being a fast, high speed or single shot imaging procedure, detecting temporal variations in said signals or images; and from said temporal variations identifying regions of abnormal or modified blood flow in said body and providing a quantitative indication of the degree of blood flow abnormality.

38. A method of detecting and quantitatively evaluating the severity of blood flow abnormality in a human body, said method comprising the steps of:

administering into the vasculature of said body a contrast enhancing amount of a paramagnetic metal containing magnetic resonance imaging contrast agent; subjecting said body to a magnetic resonance imaging procedure capable of generating from magnetic resonance signals from said body a series of temporally spaced images of at least a part of said body into which said contrast agent passes, said procedure being a fast, high speed or single shot imaging procedure, to detect temporal variations in said magnetic resonance signals or images;

detecting blood flow abnormality or flow variation in obstructed blood vessels in said body;

and identifying from said temporal variations in said images the blood flow abnormality.